



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ENVIRONMENTAL REVIEW  
AND ASSESSMENT

**MEMORANDUM**

**SUBJECT:** Recommended Wells to Sample for PFOA/PFOS at the Craig Road Landfill at Fairchild Air Force Base Spokane, Washington

**FROM:** Ted Repasky, Hydrogeologist  
Office of Environmental Review and Assessment

**TO:** Kim Prestbo, Remedial Project Manager  
Office of Environmental Cleanup

**DATE:** June 6, 2017

The following are some recommended wells to sample at the Craig Road Landfill to determine if there may be a relation between the landfill, and the recent high PFOA/PFOS contamination found at the Airway Heights city wells.

Two of the Airway Heights municipal wells had high levels of PFOA/PFOS detected in the water. The location of these community wells is shown in Figure 1 as *well #9* and *well #PS 1/4*. They had concentrations of combined PFOA/PFOS of 1520 and 1400 respectfully.

These wells are located within a scour channel cut in the basalts shown in Figure 2.

Two wells (MW-117 and MW-127) in this area have already been tested for PFOA/PFOS and have come back as either non-detects or had values below the Health Advisory levels (Figure 3). This figure also shows the groundwater potentiometric surface. These two wells that have low values in them are deep basalt wells and are not in the scour channel.

Figure 4 shows some additional wells recommended to be tested to determine if the source of the PFAS is coming from the Craig Road Landfill. An explanation for why these wells were chosen is given after Figure 4.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ENVIRONMENTAL REVIEW AND ASSESSMENT

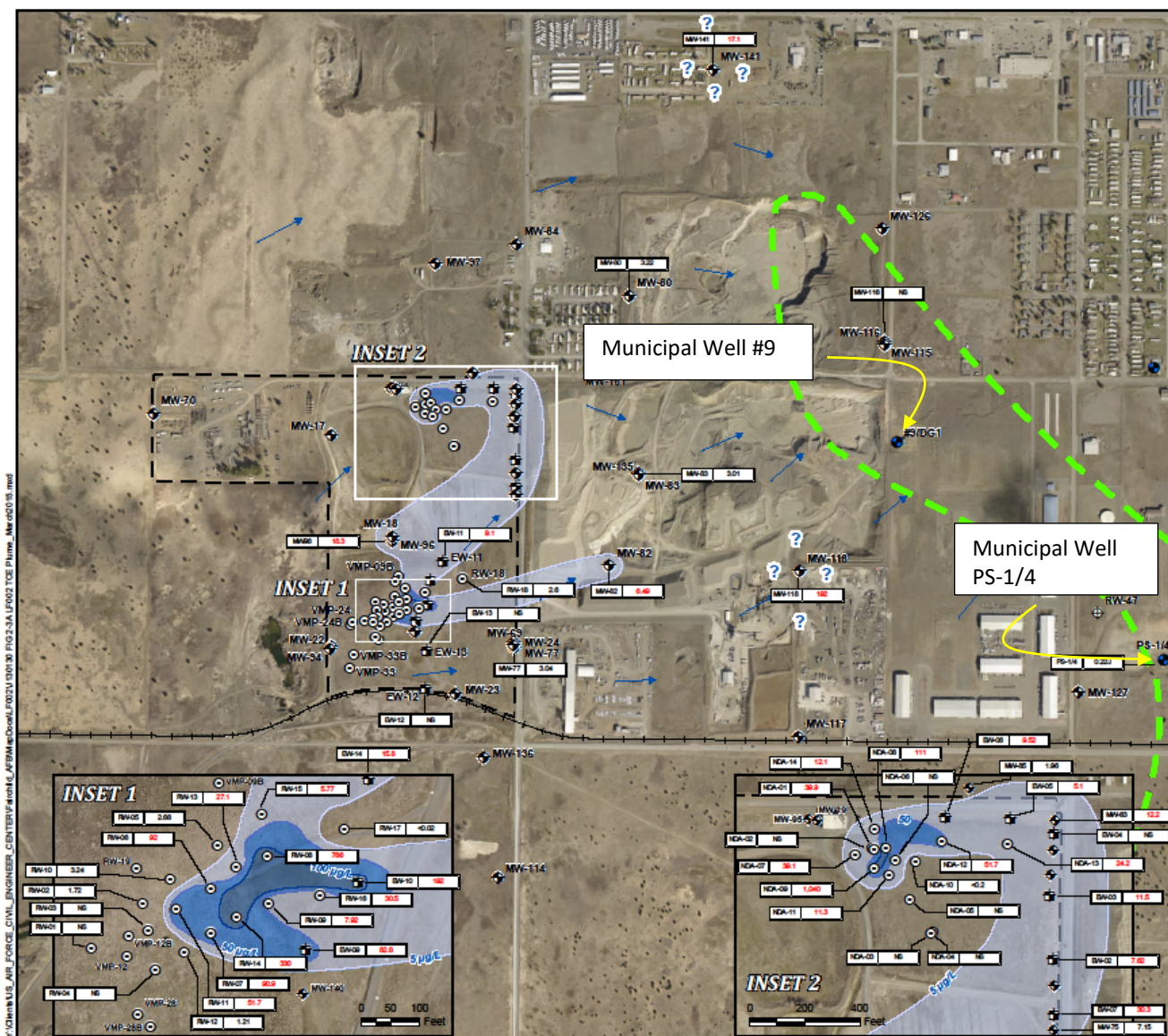
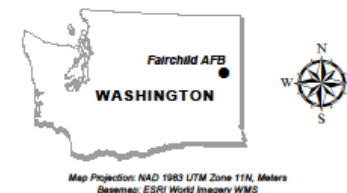


Figure 2-3A

LF002 TCE Plume  
(March 2015)

Fairchild AFB, WA



- Extraction Well
  - Monitoring Well
  - Remediation Well
  - Municipal Well
  - Railroad
  - 5 µg/L TCE Plume Contour
  - 50 µg/L TCE Plume Contour
  - 100 µg/L TCE Plume Contour
  - Limit of the Basalt A (September 1991 RI)
  - Groundwater Flow Direction
  - Craig Road Landfill (LF002) Site Boundary
- | Well ID | March 2015 TCE Results |
|---------|------------------------|
| MW-10   | 3.24                   |
| MW-11   | 1.72                   |
| MW-12   | NE                     |
| MW-13   | NE                     |
| MW-14   | NE                     |
| MW-15   | NE                     |
| MW-16   | NE                     |
| MW-17   | NE                     |
| MW-18   | NE                     |
| MW-19   | NE                     |
| MW-20   | NE                     |
| MW-21   | NE                     |
| MW-22   | NE                     |
| MW-23   | NE                     |
| MW-24   | NE                     |
| MW-25   | NE                     |
| MW-26   | NE                     |
| MW-27   | NE                     |
| MW-28   | NE                     |
| MW-29   | NE                     |
| MW-30   | NE                     |
| MW-31   | NE                     |
| MW-32   | NE                     |
| MW-33   | NE                     |
| MW-34   | NE                     |
| MW-35   | NE                     |
| MW-36   | NE                     |
| MW-37   | NE                     |
| MW-38   | NE                     |
| MW-39   | NE                     |
| MW-40   | NE                     |
| MW-41   | NE                     |
| MW-42   | NE                     |
| MW-43   | NE                     |
| MW-44   | NE                     |
| MW-45   | NE                     |
| MW-46   | NE                     |
| MW-47   | NE                     |
| MW-48   | NE                     |
| MW-49   | NE                     |
| MW-50   | NE                     |
| MW-51   | NE                     |
| MW-52   | NE                     |
| MW-53   | NE                     |
| MW-54   | NE                     |
| MW-55   | NE                     |
| MW-56   | NE                     |
| MW-57   | NE                     |
| MW-58   | NE                     |
| MW-59   | NE                     |
| MW-60   | NE                     |
| MW-61   | NE                     |
| MW-62   | NE                     |
| MW-63   | NE                     |
| MW-64   | NE                     |
| MW-65   | NE                     |
| MW-66   | NE                     |
| MW-67   | NE                     |
| MW-68   | NE                     |
| MW-69   | NE                     |
| MW-70   | NE                     |
| MW-71   | NE                     |
| MW-72   | NE                     |
| MW-73   | NE                     |
| MW-74   | NE                     |
| MW-75   | NE                     |
| MW-76   | NE                     |
| MW-77   | NE                     |
| MW-78   | NE                     |
| MW-79   | NE                     |
| MW-80   | NE                     |
| MW-81   | NE                     |
| MW-82   | NE                     |
| MW-83   | NE                     |
| MW-84   | NE                     |
| MW-85   | NE                     |
| MW-86   | NE                     |
| MW-87   | NE                     |
| MW-88   | NE                     |
| MW-89   | NE                     |
| MW-90   | NE                     |
| MW-91   | NE                     |
| MW-92   | NE                     |
| MW-93   | NE                     |
| MW-94   | NE                     |
| MW-95   | NE                     |
| MW-96   | NE                     |
| MW-97   | NE                     |
| MW-98   | NE                     |
| MW-99   | NE                     |
| MW-100  | NE                     |
| MW-101  | NE                     |
| MW-102  | NE                     |
| MW-103  | NE                     |
| MW-104  | NE                     |
| MW-105  | NE                     |
| MW-106  | NE                     |
| MW-107  | NE                     |
| MW-108  | NE                     |
| MW-109  | NE                     |
| MW-110  | NE                     |
| MW-111  | NE                     |
| MW-112  | NE                     |
| MW-113  | NE                     |
| MW-114  | NE                     |
| MW-115  | NE                     |
| MW-116  | NE                     |
| MW-117  | NE                     |
| MW-118  | NE                     |
| MW-119  | NE                     |
| MW-120  | NE                     |
| MW-121  | NE                     |
| MW-122  | NE                     |
| MW-123  | NE                     |
| MW-124  | NE                     |
| MW-125  | NE                     |
| MW-126  | NE                     |
| MW-127  | NE                     |
| MW-128  | NE                     |
| MW-129  | NE                     |
| MW-130  | NE                     |
| MW-131  | NE                     |
| MW-132  | NE                     |
| MW-133  | NE                     |
| MW-134  | NE                     |
| MW-135  | NE                     |
| MW-136  | NE                     |
| MW-137  | NE                     |
| MW-138  | NE                     |
| MW-139  | NE                     |
| MW-140  | NE                     |
| MW-141  | NE                     |
| MW-142  | NE                     |
| MW-143  | NE                     |
| MW-144  | NE                     |
| MW-145  | NE                     |
| MW-146  | NE                     |
| MW-147  | NE                     |
| MW-148  | NE                     |
| MW-149  | NE                     |
| MW-150  | NE                     |
| MW-151  | NE                     |
| MW-152  | NE                     |
| MW-153  | NE                     |
| MW-154  | NE                     |
| MW-155  | NE                     |
| MW-156  | NE                     |
| MW-157  | NE                     |
| MW-158  | NE                     |
| MW-159  | NE                     |
| MW-160  | NE                     |
| MW-161  | NE                     |
| MW-162  | NE                     |
| MW-163  | NE                     |
| MW-164  | NE                     |
| MW-165  | NE                     |
| MW-166  | NE                     |
| MW-167  | NE                     |
| MW-168  | NE                     |
| MW-169  | NE                     |
| MW-170  | NE                     |
| MW-171  | NE                     |
| MW-172  | NE                     |
| MW-173  | NE                     |
| MW-174  | NE                     |
| MW-175  | NE                     |
| MW-176  | NE                     |
| MW-177  | NE                     |
| MW-178  | NE                     |
| MW-179  | NE                     |
| MW-180  | NE                     |
| MW-181  | NE                     |
| MW-182  | NE                     |
| MW-183  | NE                     |
| MW-184  | NE                     |
| MW-185  | NE                     |
| MW-186  | NE                     |
| MW-187  | NE                     |
| MW-188  | NE                     |
| MW-189  | NE                     |
| MW-190  | NE                     |
| MW-191  | NE                     |
| MW-192  | NE                     |
| MW-193  | NE                     |
| MW-194  | NE                     |
| MW-195  | NE                     |
| MW-196  | NE                     |
| MW-197  | NE                     |
| MW-198  | NE                     |
| MW-199  | NE                     |
| MW-200  | NE                     |

NOTES:  
1) All results shown in Micrograms per liter (µg/L)  
2) Question mark symbols around MW-118 and MW-141 depict the uncertainty in the TCE plume in these locations.



Drawn By: 80 Date Drawn/Revised: 10/17/2016 Project No: J150130

Figure 1: Location of Municipal Wells

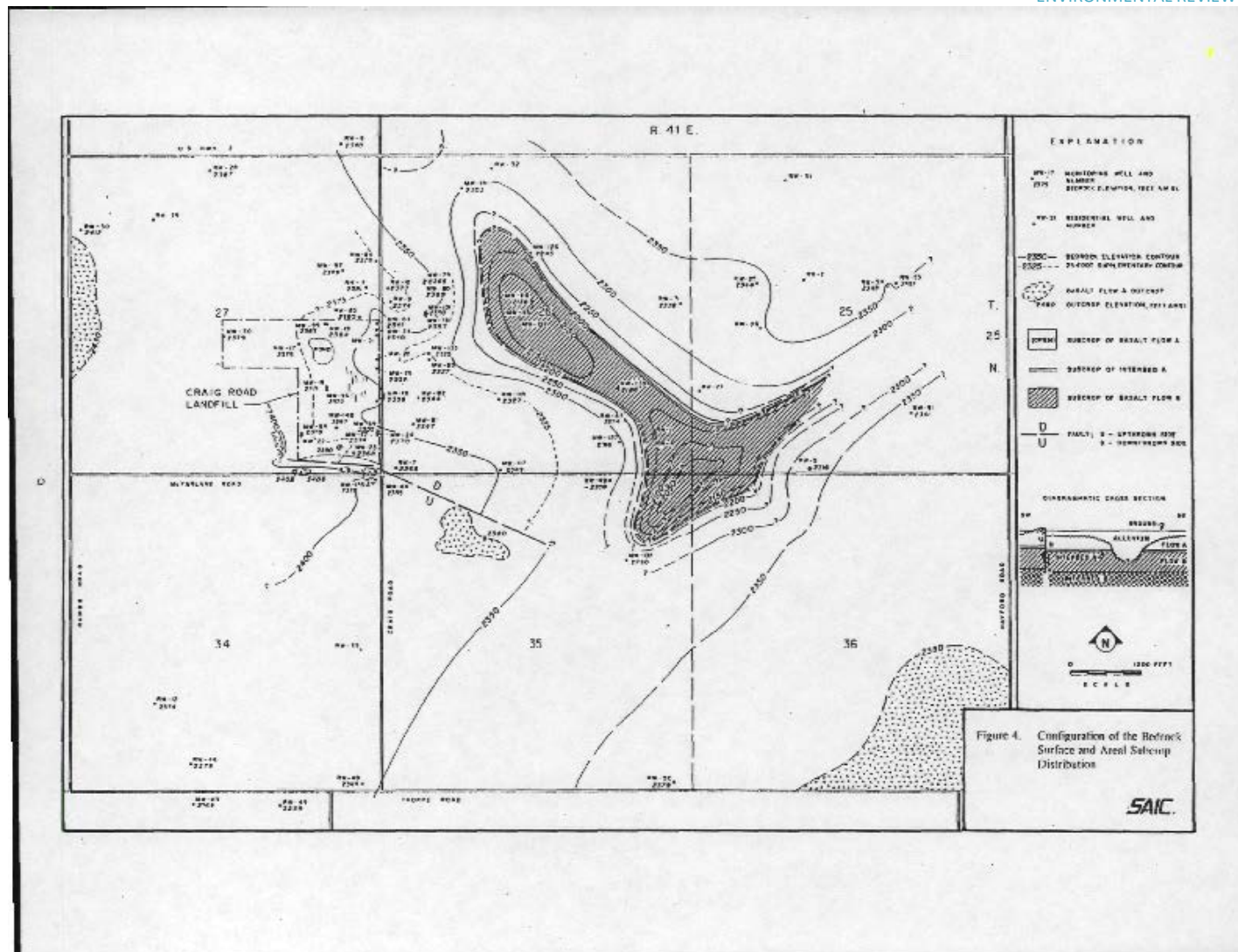


Figure 2: Erosion or Scour Channel in Basalt Surface



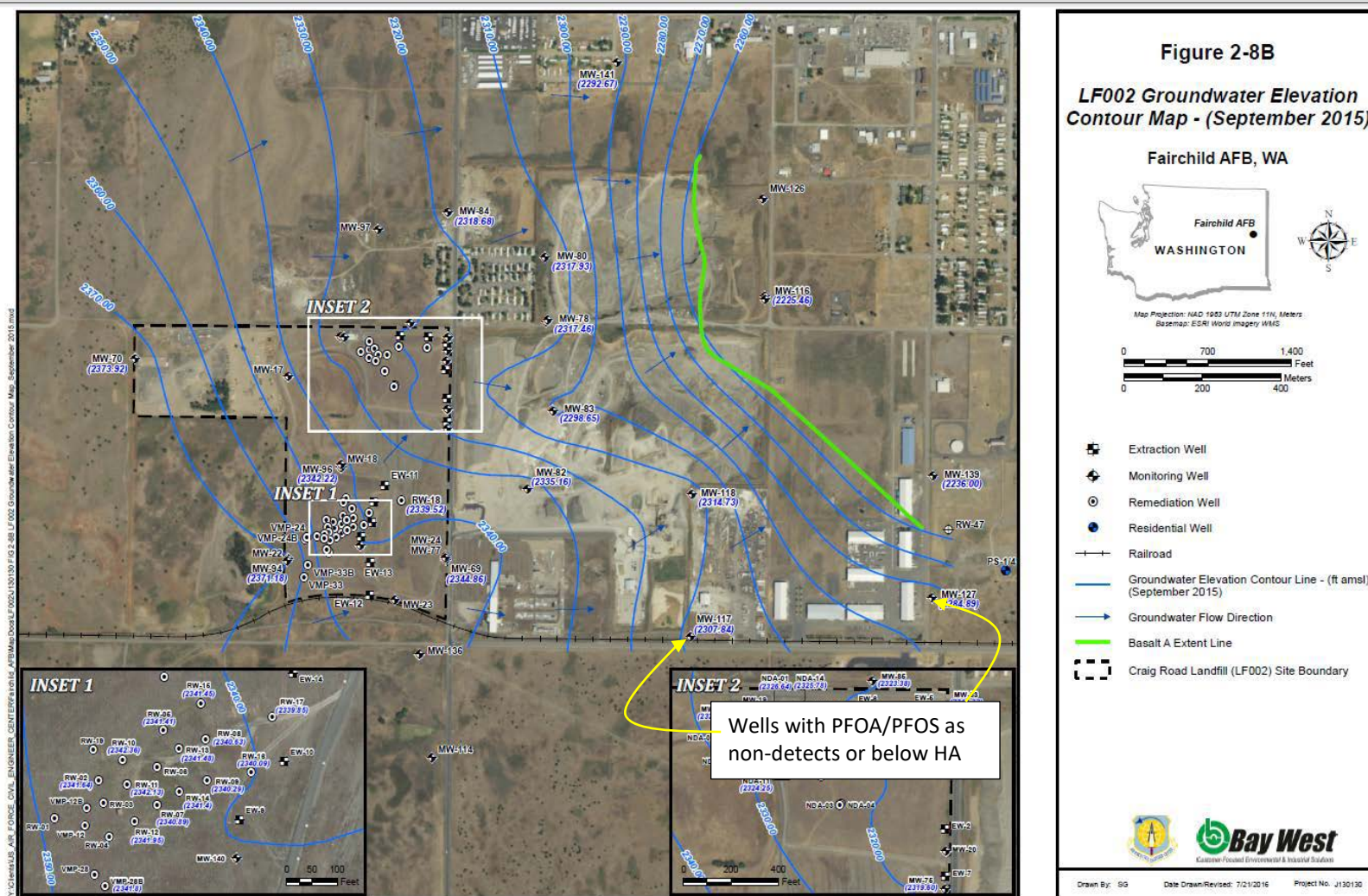


Figure 3: Wells with Non-Detects or Below HA

*Figure 4: Additional Wells to Sample*



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ENVIRONMENTAL REVIEW AND ASSESSMENT

**MW-139**

Well depth is 182 feet. This well is located in the same erosional channel as PS1/4 and #9 municipal wells (alluvium).

**MW-115**

Well depth is 180 feet. This well is also located in the erosional channel.

**MW-116**

Well depth is 274 feet. This well is also located in the erosional channel. These two wells may help to show the vertical extent of this contamination in this channel.

**MW-118**

Well depth is 114 feet. In path of contamination. Location of an off-site plume. Well completed in the Basalt A (mid).

**MW-83**

Well depth is 95 feet. Upgradient of Well #9. Completed in the Basalt A (basal)

**MW-82**

Well depth is 79 feet. Also upgradient and between wells #9 and PS1/4. Well completed in the shallow Basalt A (mid).

As the water was treated at Craig Road Landfill, it was discharged to an infiltration trench along Craig Road. This could have carried some of the PFAS down into the groundwater where it moved laterally along the surface of the basalt.

**MW-75**

Well depth 88 feet. Completed to the Basalt A (mid). Fairly shallow well and located where there is a lot of groundwater contour deflection towards the landfill.

**EW-07**

Well depth 160 feet. Completed to the Basalt A (mid-basal). May help to show a vertical groundwater gradient.

**MW-69**

Well depth 45 feet. Completed to the Basalt A (top). This is one of the shallower wells completed just to the top of the basalt. If groundwater is present, this would be a good candidate to look for the PFAS.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ENVIRONMENTAL REVIEW AND ASSESSMENT

If PFAS is found in these wells, an additional candidate for testing may be well MW-63. It is shallow (105 feet) and located at the north end of the infiltration trench.